

## ABSTRACT

The present invention is directed to optimize arrangement of through holes and enable electromagnetic waves to be efficiently propagated. A cylindrical waveguide has a dielectric substrate, ground electrodes which face each other, and a plurality of through holes for bringing the ground electrodes into conduction. In the case of determining arrangement of the through holes, first, the relation between a center interval and the radius of each of the through holes is obtained from required attenuation of electromagnetic waves. On the basis of the obtained relation, arrangement of the through holes is determined. Irrespective of a signal wavelength and the like conventionally used as parameters, the arrangement of the through holes can be optimized.